



Inter-professional Management of Patients with Hip Fractures Starting in the Emergency Department: Policy Implications

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ABSTRACT

Hip fractures have been described as one of the most serious of osteoporotic fractures and musculoskeletal injuries across the globe due to increased risk of morbidity, mortality, and loss of independence after injury. Early coordinated and structured inter-professional management, starting at the point of entry into the healthcare system has shown to decrease these poorer outcomes. However, currently there are no policies in place in the Canadian province of New Brunswick to initiate an inter-professional program or protocol at the point of entry, which is usually the emergency department. This policy brief includes a description of concise actions to address this issue, including human and financial resource implications. Implementing the priority recommendations presented will have an immediate benefit to those living in New Brunswick and will lay the groundwork to engage in future development of a more comprehensive national-level inter-professional hip fracture program across Canada.

Keywords: hip fractures, inter-professional protocol, emergency services, policy brief

Introduction

In a recent evidence synthesis of current hip fracture clinical practice guidelines, early inter-professional management of patients with hip fractures using a standardized protocol was highlighted as being integral to decreasing adverse events and improving long-term outcomes (Filiatreault, Hodgins, & Witherspoon, 2018). Early coordinated and structured inter-professional management, starting at the point of entry into the healthcare system, has shown to decrease morbidity, mortality and length of stay (Grigoryan, Javedan, & Rudolph, 2014; Haentjens et al., 2010), which decreases costs for patients and their families, as well as the healthcare system (Castelli, Daidone, Jacobs, Kasteridis, & Street, 2015). In Canada, and most other western countries, the point of entry to the healthcare system for the majority of patients with hip fractures is the emergency department (Taylor & Nairn, 2012; Waddell et al., 2010). However, there is currently not a standardized inter-professional program or protocol that is initiated upon arrival to the emergency department in the province of New Brunswick, which is problematic because hip fractures most commonly affect older adults (Leslie et al., 2009) and New Brunswick has the oldest population among the provinces (19.9% aged 65 years or older compared to 12.3% in Alberta; Statistics Canada, 2017). Furthermore, New Brunswick has a statistically higher age-standardized (65 years and older) rate of hip fractures (589 per 100,000) when compared to Canada as a whole (500 per 100,000; Canadian Institute for Health Information [CIHI], 2015).

Given the context in New Brunswick, it is important that policies are put into place that support early coordinated and standardized inter-professional management for patients with hip fractures. From a range of policy options three actions seem most viable:

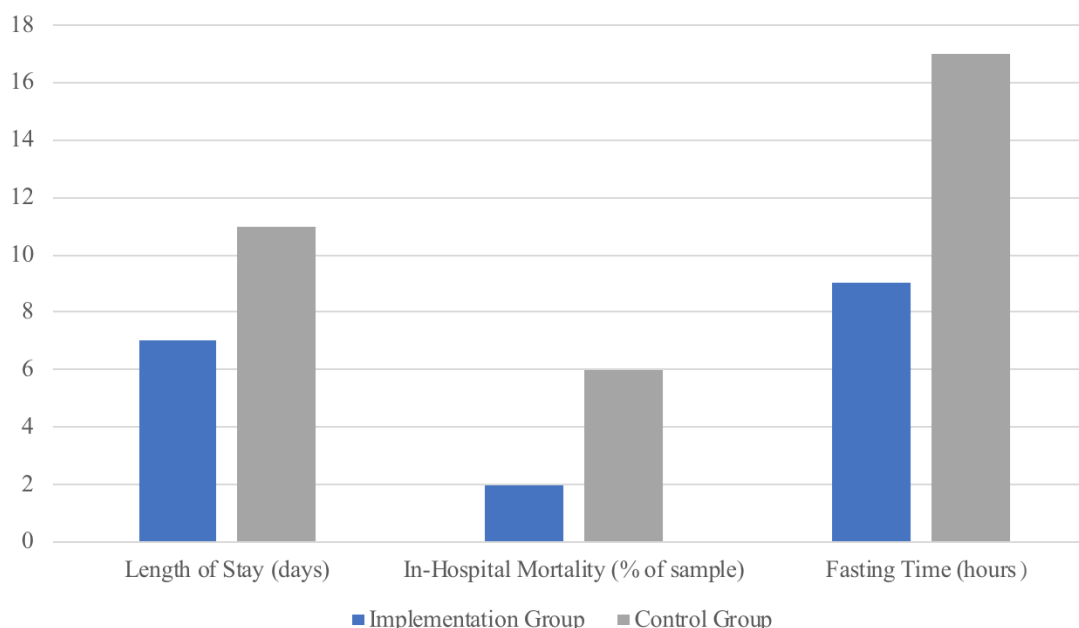
1. Commission a Task Force of provincial decision-makers and stakeholders (including public representatives) to develop a standardized inter-professional protocol based the synthesis of current evidence. Rationale: A synthesis of the most current high-level evidence (clinical practice guidelines) has recently been published (Filiatreault et al., 2018). The committee can build on the work that has already been conducted to develop an inter-professional protocol for the New Brunswick context and incorporate the views and preferences of the patient population.
2. Implement a policy to allow the first healthcare professional that assesses a patient presenting with a suspected hip fracture to initiate the inter-professional protocol. Rationale: The first healthcare professional on a patient's arrival to the emergency department is usually a registered nurse (triage nurse). Implementing a policy to allow nurses to initiate an inter-professional protocol as soon as possible supports early coordinated and standardized inter-professional management to rapidly optimize a patient's condition and improve outcomes (Waddell et al., 2010).
3. Collaborate with other provincial governments to commission inter-professional research into models of inter-professional management of patients with hip fractures in the Canadian context. Rationale: While the scientific evidence is compelling, the majority of research in the

implementation of inter-professional programs has been conducted in the United Kingdom (UK) and other European countries (Hommel & Bååth, 2016; Royal College of Physicians, 2017). A comprehensive plan for implementation in the Canadian, and New Brunswick, context is essential. At present, little is known in terms of implementing a coordinated and standardized inter-professional program in the Canadian and New Brunswick context. Time costs could be up to two years and financial costs would depend on the study method selected.

In light of the above options, I think a combination of the first two actions should be the top priority, as it requires the least amount of time and financial resources and would produce the most immediate benefit to New Brunswickers.

In a recent clinical trial conducted in the Netherlands, implementation of a coordinated inter-professional protocol that was initiated in the emergency department resulted in a significant decrease in length of hospital stay (7 days versus 11 days), in-hospital mortality (2% versus 6% of sample), and pre-operative fasting time (9 hours versus 17 hours) when compared to a retrospective control group (see Figure 1; Flikweert, Izaks, Knobben, Stevens, & Wendt, 2014). The use of historical controls may have biased the results of this study, although due to the design, the effectiveness was more than likely underestimated, therefore implementation of an inter-professional protocol may have more added benefit than reported in this study.

Figure 1. *Relevant results from clinical trial of an inter-professional hip fracture protocol.*



Source: Flikweert, E. R., Izaks, G. J., Knobben, B. A. S., Stevens, M., & Wendt, K. (2014). The development of a comprehensive multidisciplinary care pathway for patients with a hip fracture: Design and results of a clinical trial. *BMC Musculoskeletal Disorders*, 15(1), 1–15. <https://doi.org/10.1186/1471-2474-15-188>

Several countries have recognized the importance of early inter-professional management for patients with hip fractures, as exemplified by the implementation of nation-wide inter-professional hip fracture programs that are guided by an inter-professional protocol in: the UK (Royal College of Physicians, 2017), Denmark (Kristiansen, Kristensen, Nørgård, Mainz, & Johnsen, 2016), Australian and New Zealand (Australian and New Zealand Hip Fracture Registry [ANZHFR] Steering Group, 2014), and Sweden (Hommel & Bååth, 2016). These programs have shown reductions in-hospital and follow-up patient mortality, hospital length of stay, risk of delirium, and nursing home admission (Grigoryan et al., 2014; Martinez-Reig, Ahmad, & Duque, 2012; National Clinical Guideline Centre [NCGC], 2011). To exemplify this, a recent study conducted using data from the National Hip Fracture Database in the UK showed that a coordinated inter-professional program led to a 2.4% reduction in relative risk of mortality after a hip fracture, which is equivalent to the avoidance of nearly 200 deaths per year in the UK (Neuburger et al., 2017).

Financial costs for implementing an inter-professional protocol or program have not been explored in the Canadian context, although evidence from the UK indicates that the implementation of such protocols and pathways are of economic benefit due to decreases in hospital length of stay and nursing home admissions (Castelli et al., 2015; NCGC, 2011). Which suggests that not implementing a policy to initiate an inter-professional protocol as early as possible in the management of patients with hip fractures stands to increase the financial burden on the healthcare system.

There also remains a lack of clarity for human resource implications in Canada. In the UK, the core professional groups identified as integral for the inter-professional management of patients with hip fractures are: orthopedics, geriatrics, nursing, physiotherapy, occupational therapy, and social care (NCGC, 2011). Although, previous researchers have found that a lack of clarity between the medical group most responsible for the management of patients with hip fractures (i.e., orthopedics versus geriatrics) has created a barrier to implementation of a protocol or program (Pioli, Giusti, & Barone, 2008). The use of other advanced health care providers (i.e., nursing practitioner or clinical nurse specialist) that can collaborate and coordinate care amongst other professional groups may be worth exploring to ensure successful implementation of an inter-professional protocol in the Canadian and, more specifically, the New Brunswick context.

The majority of research conducted examining patients' experiences and views of care received after sustaining a hip fracture has been conducted in Sweden where they have had an inter-professional protocol implemented at a national-level for over a decade (Hommel, Kock, Persson, & Werntoft, 2012). Evidence suggests that patients experience a lack of participation in their care and use of a standardized inter-professional protocol can decrease individualized care (Aronsson, Björkdahl, & Wireklint Sundström, 2014). With the increased emphasis on patient-centred care and learning health systems (Schuman, 2013), it is imperative that there is public involvement in any Task Force commissioned to create such an inter-professional protocol for the New Brunswick context. This will ensure patient views and preferences are taken into consideration in the development and implementation process.

Beyond any doubt, the evidence demonstrates that initiating an inter-professional protocol for the management of patients with hip fractures at their point of entry into the healthcare system leads to improved patient outcomes and decreased costs, which has strong implications for those involved in research, policy and implementation. Implementation of a standardized inter-professional protocol to be initiated by nurses in the emergency department will have the most immediate benefit to New Brunswickers and will be the first step for New Brunswick to engage in collaboration with the federal and provincial governments for the future development of a comprehensive national-level inter-professional hip fracture program in Canada.

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